Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Modifications of Part 2 an 15 of the Commissions Rules for unlicensed devices and equipment Approval	)	ET 03-201

COMMENTS OF NARTE, INC.

NARTE Inc hereby submits comments in response to the Commission's Notice of Proposed Rule Making on Modification of the Part 2 and 15 Rules NARTE applauds the Commission's continued efforts to address streamlining the technical rules to address newer technology and that were raised as part of Spectrum Taskforce report[1].

NARTE[2] is a non profit organization specializing in the certification of Unlicensed Wireless System Installers as well Telecommunication, EMC[3], ESD Control Engineers and Technicians.

NARTE wishes to address one specific issue regarding this NPRM. This is specifically is the definition of "Professional Installer" under section 15.203. As stated in earlier Part

[1] Spectrum Policy Taskforce Report, November 2002

[2] NARTE was founded in 1982 in response to the FCC deregulation and the removal of the requirements of requiring a Radio Telephone Licenses to service some telecommunications systems. Further info can be obtained off the NARTE web site at www.narte,org

[3] NARTE EMC Certification has been accepted by A2LA and NVLAP as proof of competence in this field when assessing lab accreditations

15 filings[4], the Commission does not have a definition of Professional Installer. As part of the Ex Pate on 02-312, NARTE met with the Commission to address this issue and urged the commission to adopt the industry definition of Professional Installer in alignment with the industry certification programs such as NARTE and LEA as far as defining a professional installer.

Currently no clear definition exists for who or what a Professional Installer is. The lack of this definition raises concern for NARTE and the industry in light of the proposed changes which including mixing and matching 3rd party amplifiers and sector antennas without the requirement for certifying that particular system. The Commission has stated that this must be done by a "Professional Installer" but does not adequately define who or what that is.

NARTE understands the Commissions position on not endorsing any one certification program; however the Commission now will accept lab accreditation in lieu of submitting NSA curves and other relaxations for these labs on being listed as approved sites for certification of products. Based on that precedence NARTE encourages the Commission to adopt the basic criteria of skill sets and training and such of these programs as a guideline to determine how to define who a professional installer is. This could also encompass requirements of the various training institutes and private industry training programs to develop guidelines on which a professional installer is.

[4] See Cisco comments on 02-312, ITI Comments on 02-312, and LEA filing on 02-312

Further though the Commission cannot adopt any one certification program, we urge the Commission to recognize the value of such programs and reference NARTE or equivalents certifications as one form of recognized proof of qualification as a professional installer while not making the certification mandatory.

The NARTE Wireless Installer certification is an independent endorsement of one's education, training and skill sets for one installing unlicensed wireless systems. Therefore the Commission should consider adopting criteria for a Professional Installer based on those key values of education and experience.

Therefore NARTE suggests that the Commission adopt the following definition to describe a Professional Installer and place this definition in section 2.1 or 15.3 of the FCC rules to describe a professional installer

"*Professional Installer: An individual that has been thoroughly trained either through in –house training , by the manufacturer of the equipment, or by a 3rd party[5] and is technically qualified to perform one or more of the following tasks, the site survey , or installation and configuration of the system , field modification and upgrades, or repair and service of the Part 15 wireless equipment that requires professional installation per Part 15.203 of the Commissions rules.*

[5] The NARTE Wireless Installer Certification a 3rd party certification which is described in attached appendix A of this document, is based on work experience, training and qualification testing would provide independent documented proof to fulfill the requirements as stated.

We therefore urge the Commission to adopt the definition of Professional Installer as defined by NARTE and recognized by the industry.

NARTE Inc
167 Village Street
Medway, MA 02053

Stephen Berger NCE
Russ Carsten NCE
David A. Case NCE, NCT

Appendix A (Reference Only)

Overview of NARTE program

Wireless Installer Certification

NARTE established the Wireless System Installers Certification program to certify those people dealing specifically with the installation of unlicensed systems to add definition to the Federal Communications Commission (FCC) requirement for professional installation. This certification program provides a mechanism to certify those who install wireless LAN systems, Bluetooth, UNII devices, AVIS, and unlicensed PCS Systems.

Wireless Installer ENGINEER Certification Criteria

1. **Complete the Wireless Installer Application Form and submit application fee of $49.**

   Submission of the application form implies agreement to adhere to the **NARTE Code of Ethics.**

2. **References: Using the NARTE reference forms, submit 4 references:**

   engineering may be given credit up to one year.

3. **Show experience for Endorsements requested:**

   If you are requesting one or more endorsement(s) to the wireless installer certification you must clearly show a minimum of one year experience for each category of endorsement requested.
   These endorsements are:

   - **Information Systems:** Includes but not limited to WLANs, WAN, Point to Point systems (including 24 GHz), Home RF and Bluetooth devices, UNIII based systems, Hyperlan 1 and Hyperlan II based systems.
   - **Security and Identification Systems:** Includes but not limited to Field Disturbance Systems, Perimeter Monitors, RFID Systems.

- **Transportation Systems:** Includes but not limited to Tunnel Radio Systems, Automatic Vehicle Identification Systems, Vehicle Location Monitoring Systems.

4. **Provide evidence of education and training.**

   Compose and submit 10 multiple choice questions relative to wireless installation design and practices.
5. **Pass the NARTE Wireless Installer Engineer examination**

Preparing for the Wireless Examination

The examination for an unlicensed wireless systems installation engineer or an unlicensed wireless systems installation technician is approximately four hours duration. All examinations are given with open book.

Questions have been prepared in these essential areas for both engineers and technicians. For any given examination, the set of questions will be pulled from a random selection of the inventory of examination questions.

Unlicensed wireless systems fundamentals covered in the examination include but are not limited to the following subjects:

- Unlicensed RF systems design
- System installation
- Theory in site survey
- Site survey practices
- Regulatory Requirements
- Performance of RF safety studies
- Antenna systems
- Tower requirements
- Network support
- Software troubleshooting
- RF transmission line theory
- System integration
- Performance of on-site modifications

The percentage required to pass the examination is 70%. This may be achieved by adding to the percentage made on the examination paper one half of 1% for each extra year of experience satisfactory to NARTE above the minimum required (nine years for Engineers, six years for Technicians). No candidate is considered as having passed who received less than 60% on his or her examination paper, thus the maximum percentage allowed for experience is 10%.

Examination Reference Material

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- ***ANSI/IEEE STD 100: IEEE Standard Dictionary of Electrical and Electronic Terms***, IEEE, 1984.
- ***FCC CFR 47 Part 0 - 19*** Requirements for Part 15 concentrate on 15.203, 15.204, 15.245, 15.247, 15.249, (UPCS) and 15.401 (UNIT).
- ***Industry Canada RSS-210***, Low Power License-Exempt Radiocommunication Devices (all Frequency Bands), Issue 4, December 2000.
- ***ETSI EN 300.328***, Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; 2001-12.
- ***ETSI EN 301.489***, Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; 2002-04.
- ***IEEE 802.11***, IEEE Standard for Information technology-Telecommunications and information exchange between systems- Local and metropolitan area networks- Specific requirements-Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications, 1999.
- ***IEEE 802.11b***, Supplement to IEEE Standard for Information technology-Telecommunications and information exchange between systems- Local and metropolitan area networks- Specific requirements-Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications: Higher-Speed Physical Layer Extension in the 2.4 GHz Band, Sept 16, 1999.
- ***ANSI C63.17***, American National Standard for Methods of Measurement of the Electromagnetic and Operational Compatibility of Unlicensed Personal Communications Services (UPCS) Devices, August 15, 1997.

- ***FCC Bulletin OET 65C***, Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions, Supplement C to OET Bulletin 65, June 2001.
- ***FCC ET Docket 96-8***, Spread Spectrum Transmitters, Federal Register, Volume 62, No. 92 Tuesday, May 13, 1997, Rules and Regulations.
- ***Making Sense of the 5GHz Regulations for Unlicensed Transmitters***, by David A. Case, CE Magazine, July/August 1999.
- ***Wireless LANs***, second edition, by Jim Geir, Sams Publishing, 2002.
- ***EMC Telecom and Computer Encyclopedia***, by Don Whites, EMF-EMI Control inc., 2000.
- ***The Mobile Communications Handbook***, Second Edition, by Gibson, CRC Press, Feb 23, 1999. (Also available in CDROM version.)
- ***Wireless Information Networks*** by Kaveh Pahlavan, Wiley, 1995.
- US Department of Transportation, FAA, Advisory Circular, AC/70/7460-1K, Obstruction Marking and Lighting, http://www.faa.gov/ats/ata/ai/circV.pdf 8/1/2000.
- Telex Wireless Products Group, WLAN/WISP, Frequently Asked Questions, www.telexwireless.com/wlanfaq.htm, June 2002.
- Tower and Antenna Siting Issues, http://wireless.fcc.gov/siting/, 4/26/2002.
- The ARRL Handbook, The American Radio Relay League, 2002.